REMARKS

Claims 1-20 are pending the present application. Claims 1, 2, 7, and 16-18 are amended.

The Office Action objected to the drawings as failing to comply with 37 CFR 1.84(p)(5) because reference numeral 50 was not in Figure 1. A separate paper showing the proposed change in red for approval by the Examiner is enclosed. This proposed change adds reference numeral 50 to Figure 1 and contains no new matter.

The Office Action objected to various informalities in the disclosure. The specification is amended to correct the typos objected to by the examiner as well as a few additional typos. Claims 1, 7 and 16 are amended to correct the spelling and grammar errors objected to by the examiner. In addition, the abstract was amended to correct a spelling error and to remove reference numerals. Applicant requests reconsideration in light of these amendments traversing the objections.

The Office Action objected to claims 1-5, 8-12, and 15-20 for various informalities. Claims 1, 7, and 16 are amended to correct spelling and grammar errors. Applicants request reconsideration in light of these amendments traversing the objections.

The Office Action rejected claims 2, 17, and 18 under 35 U.S.C. § 112, second paragraph. Claim 2 is amended to remove the phrase "preferably an interferometric unit" and claims 17 and 18 are amended to remove the phrase "preferably during the actual measurement." In view of the amendments to these claims, Applicants respectfully submit that the rejection thereof is now moot and should be withdrawn.

The Office Action rejected claims 1-2, 5-10, 13-19 under 35 U.S.C. § 102(b) as being anticipated by Knowles et al. (U.S. Patent No. 5,991,324). Applicants respectfully submit that the Office Action did not make out a *prima facie* case of anticipation, because Knowles does not teach each and every claim element of these claims.

Claim 1 recites "wherein the coarse-measuring unit comprises one or more materials having a wavelength-dependency of reflection and/or transmission." Knowles does not disclose these elements. By contrast, the coarse measurement in Knowles is based on diffraction leading to an anugular displacement dependent on the wavelength.

(Knowles, col. 9 lines 29-59). Therefore, Knowles does not disclose every element of claim 1.

Claim 2 recites "wherein the fine-measuring unit comprises means for providing a periodic wavelength dependency, the periodicity of the wavelength-dependency being larger than a measuring fault or inaccuracy of the coarse-measuring unit." Like claim 1, claim 2 is not based on diffraction as is Knowles. (Knowles, col. 9 lines 29-59). Therefore, Knowles does not disclose every element of claim 2.

Claim 5 recites "an absolute-measuring unit having unambiguous wavelength properties." Knowles discloses an "atomic reference unit 90" (Knowles, Figure 10; col. 11, lines 13-18). However, the atomic reference unit does not have unambigous wavelength properties. Therefore, Knowles does not disclose every element of claim 5.

Claim 6 recites "determining in a first wavelength range and with a first accuracy a first wavelength value as representing the wavelength of the incoming optical beam," "determining a second wavelength range covering the first wavelength value," and "determining a second wavelength value as the one of the plurality of different wavelength values that corresponds to the measuring value in the second wavelength range." However, Knowles does not disclose any such wavelength ranges or any wavelength value within a wavelength range. By contrast, Knowles discloses calculations involving interpolation from the diameters of various peaks in a curve from an etalon fringe signal. (Knowles, Figure 11B; col. 10, line 1 to col. 11 line 8). Therefore, Knowles does not disclose all the elements of claim 6.

Dependent claim 7 incorporates the elements of base claim 6 that are not dislosed in Knowles. Therefore, Knowles does not disclose all the elements of claim 7.

Claim 8 recites "wherein providing a reference measurement is executed prior to determining in a first wavelength range and with a first accuracy a first wavelength value, for calibration before an actual measurement." Knowles does not disclose providing any reference measurement prior to determining a first wavelength value in a first wavelength range. By contrast, Knowles discloses calibrating a wavemeter "when the output of photo diode 96 is lowest is detected." (Knowles, col. 11, lines 24-29). Therefore, Knowles does not disclose every element of claim 8.

Claim 9 recites "analyzing a measuring result derived from sweeping an input signal over a wavelength range, together with a measuring result derived from determining in a first wavelength range and with a first accuracy, a first wavelength value." Knowles does not disclose any wavelength range or any wavelength value in the wavelength range. By contrast, Knowles discloses looking at peaks in data windows. (Knowles, col. 10, line 1 to col. 11 line 8). Therefore, Knowles does not disclose every element of claim 9.

Claim 10 recites "wherein the coarse-measuring unit comprises one or more materials having a wavelenght-dependency of reflection and/or transmission." Knowles does not disclose these elements. By contrast, the coarse measurement in Knowles is based on diffraction leading to an anugular displacement dependent on the wavelength. (Knowles, col. 9 lines 29-59). Therefore, Knowles does not disclose every element of claim 10.

Claim 13 recites "providing a wavelength determination with a second accuracy for the incoming optical beam, wherein the wavelength determination is ambiguous within the first wavelength range but unambiguous in each of a plurality of unambiguous wavelength ranges, so that a plurality of different wavelength values correspond to a measuring value as measured for the incoming optical beam, and wherein the second accuracy is higher than the first accuracy." Knowles does not disclose any ambiguous wavelength determination within any wavelength range. By contrast, Knowles discloses measuring diameters of peaks in data windows. (Knowles, col. 10, line 1 to col. 11, line 8). Therefore, Knowles does not disclose every element of claim 13.

Dependent claim 14 incorporates the elements of base claim 13 that are not disclosed in Knowles. Therefore, Knowles does not disclose all the elements of claim 14.

Dependent claim 15 incorporates the elements of base claim 1 that are not disclosed in Knowles. Therefore, Knowles does not disclose all the elements of claim 15.

Dependent claim 16 incorporates the elements of base claim 6 that are not disclosed in Knowles. Therefore, Knowles does not disclose all the elements of claim 16.

Claim 17 recites "for providing a continuous calibration." Knowles does not disclose this element. By contrast, Knowles only discloses calibrating a wavemeter

"when the output of photo diode 96 is lowest is detected." (Knowles, col. 11, lines 24-29). Therefore, Knowles does nto disclose all the elements of claim 17.

Claim 18 recites "wherein providing a reference measurement is executed concurrently with determining in a first wavelength range . . . for providing a continuous calibration." Knowles does not disclose doing anything concurrently. By contrast, Knowles only discloses calibrating a wavemeter "when the output of photo diode 96 is lowest is detected." (Knowles, col. 11, lines 24-29). Therefore, Knowles does not disclose all the elements of claim 18.

Claim 19 recites "analyzing a measuring result derived from sweeping an input signal over a wavelength range together with a measuring result derived from determining in a first wavelength range." Knowles does not disclose any wavelength ranges or any sweeping. By contrast, Knowles discloses measuring diameters of peaks in data windows. (Knowles, col. 10, line 1 to col. 11 line 8). Therefore, Knowles does not disclose every element of claim 19.

Applicants respectfully request reconsideration of claims 1-2, 5-10, and 13-19, because Knowles does not teach or suggest each and every claim element of these claims. Thus, these claims are patentable under 35 U.S.C. § 102(b) over Knowles.

The Office Action rejected claims 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Knowles et al. in view of Cargill et al. (U.S. Patent No. 5,515, 169) and Fowles (G. R. Fowles, "Introduction to Modern Optics," Dover Publications, New York, 1968, pp. 96-99). Applicants traverse this rejection, because there is no motivation to combine the references.

As shown above, Knowles does not teach or suggest that which is recited in claim 1, which are also elements of dependent claims 3 and 4. These same elements are not taught or suggested by Cargill or Fowles. Therefore, claims 3 and 4 are patentable over Kowles, Cargill, and Fowles.

Knowles describes a wavemeter like the one in Cargill (Cargill, Figure 2C; col. 5, lines 1-59) as one that "cannot meet desired accuracy requirements for wavelength measurements." (Knowles, col. 3, lines 4-23). Thus, one skilled in the art trying to improve the accuracy of the Knowles wavemeter would not use Cargill since the accuracy of the Cargill wavemeter is less than the wavemeter of Knowles. Therefore,

there is no motivation to combine Cargill with Knowles. The addition of Fowles does not change this fact. Claims 3 and 4 are thus patentable over Cargill, Knowles, and Fowles. Applicants traverse this rejection and request reconsideration of claims 3 and 4.

The Office Action rejected claims 11, 12, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Knowles et al. in view of Vry et al. (German Patent No. DE 41 14407 A1). Applicants traverse this rejection because a *prima facie* case of obviousness was not made out. The references do not teach or suggest all of the elements as set forth in the claims.

As shown above, Knowles does not teach or suggest each and every element of base claim 6, which are inherited by indirectly dependent claims 11, 12, and 20. These same elements are not taught or suggested by Vry. Therefore, claims 11, 12, and 20 are patentable over the combination of Kowles and Vry.

Claim 11 recites "wherein determining a second wavelength range covering the first wavelength value comprises determining the second wavelength range as a wavelength range around the first wavelength value." By contrast, Vry teaches removing the ambiguity of a rough value of a wavelength by using the thermodynamic properties of the ambient air. (Vry, abstract; pages 3-4). Vry does not teach or suggest determining such a second wavelength range. Therefore, the combination of Knowles and Vry does not teach or suggest all of the elements of claim 11.

Claim 12 recites "wherein the second wavelength range is determined by adding and subtracting a value." As shown above, Vry does not teach or suggest determining such a second wavelength range. Therefore, the combination of Knowles and Vry does not teach or suggest all of the elements of claim 12.

Claim 20 recites "wherein the second wavelength range is determined by adding and subtracting a value corresponding to half of the period of the unambiguous wavelength range covering the first wavelength value, to and from the first wavelength value." As shown above, Vry does not teach or suggest determining such a second wavelength range. Therefore, the combination of Knowles and Vry does not teach or suggest all of the elements of claim 20.

Thus, Claims 11, 12, and 20 are patentable over Knowles and Vry and Applicants request reconsideration of these claims.

In view of the foregoing, Applicants respectfully submit that all of the claims in the present application are patentably distinguishable over the references cited in the Offfice Action. Accordingly, Applicants respectfully request reconsideration and passing the claims to allowance.

Respectfully submitted,

12-30-02
Date

Paul D. Greeley, Esq.
Reg. No. 31019
Attorney for the Applicants
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 10th Floor
Stamford, CT 06901-2682
Tel: 203-327-4500
Fax: 203-327-6401

MARKED UP VERSION OF AMENDMENTS TO THE SPECIFICATION

1. The following paragraph is the marked up version of the paragraph beginning at page 2 line 23 and ending at page 3 line 5.

A further interferometric solution makes use of the interferometric properties of etalons, i. e. plane parallel plates of glass or fused quartz with reflecting surfaces. Due to the interference at the surfaces within the etalon, the light beam transmitted through the etalon exhibits a wavelength dependent transmission characteristics, generally showing a sine[us] or cosine[s] shape. As disclosed in EP-A-875743, the wavelength resolution can be significantly improved by combining two etalons with different phase dependencies on the wavelength. By providing a phase shift (in particular of n/2) between the two curves, the problem of the ambiguous turn points in the sine[us]- or cosine[s]-like shapes can be avoided and a tangent relationship on the wavelength can be achieved. Instead of using two separated etalon elements, one birefringent element can be provided in combination with corresponding polarizing elements. Since the resulting transmission-over-wavelength characteristic is not unambiguous due to the periodicity of the curves, main applications are finetuning of variable laser sources, whereby the wavelength location is already roughly known and can therefor be assigned to a corresponding period of the curve.

2. The following paragraph is the marked up version of the paragraph beginning at page 3 line 25 and ending at page 4 line 3.

A wavemeter according to the invention for determining the wavelength of an incoming optical beam comprises a coarse-measuring unit and a fine-measuring unit. The coarse-measuring unit allows <u>for</u> unambiguously determining the wavelength of the incoming optical beam over a first wavelength range. The fine-measuring unit provides an ambiguous wavelength determination for the incoming optical beam, however with a higher accuracy than the accuracy of the coarse-measuring unit. Although the wavelength

determination of the fine-measuring unit is ambiguous within the first wavelength range (e. g. since it provides a periodic wavelength dependency), it is provided to be unambiguous in each of a plurality of unambiguous wavelength ranges, whereby each of the plurality of unambiguous wavelength ranges is smaller than the first wavelength range.

3. The following paragraph is the marked up version of the paragraph beginning at page 7 line 21 and ending at page 7 line 23.

The necessity of calibration generally depends on the wavelength stability and/or wavelength characteristics of the coarse-measuring unit and/or the fine-measuring unit, which may be influenced by temperature, mechanical shock or aging.

4. The following paragraph is the marked up version of the paragraph beginning at page 7 line 25 and ending at page 7 line 29.

Thus, the invention provides a wavemeter allowing to assign with a higher precision and accuracy a wavelength to an incident light beam. The applicable wavelength range of the wavemeter can be adjusted by selecting or designing the wavelength-dependencies of the coarse-measuring unit and/or the fine-measuring unit.

5. The following paragraph is the marked up version of the paragraph beginning at page 8 line 20 and ending at page 8 line 21.

Figure 3 depicts an example of a wavelength-dependency of the fine-measuring unit 200.

6. The following paragraph is the marked up version of the paragraph beginning at page 5 line 9 and ending at page 9 line 15.

Suitable materials, e. g. for providing a wavelength-dependency of a coating, can be for example MgF2, SiO, or CeF3. Preferred embodiments of the coarse-measuring unit are dielectric filters, wherein the reflectivity-and transmission-characteristics changes unambiguously within the wavelength range of interest. Dual detectors, wherein the incoming beam is split up and provided to detectors with different response characteristics over the wavelengths can be applied accordingly.

7. The following paragraph is the marked up version of the paragraph beginning at page 8 line 8 and ending at page 8 line 12.

Other objects and many of the attendant advantages of the present invention will be readily appreciated and become better understood by reference to the following detailed description when considered[ing] in connection with the accompanied drawings. Features that are substantially or functionally equal or similar will be referred to with the same reference sign(s).

8. The following paragraph is the marked up version of the paragraph beginning at page 8 line 25 and ending at page 9 line 11.

Figure 1 shows a preferred embodiment of a wavemeter 50 according to the invention. An incident light beam 100 is split by a first beam splitter 110 into beams 110A[100A] and 110B[100B]. The beam 110A[100A] is then again split up by a second beam splitter 120 into beams 120A and 120B. The beam 120A is directed towards a coarse-measuring unit 130 consisting of a third beam splitter 140 and two detectors 150A and 150B. The third beam splitter 140 splits up beam 120A into a beam 140A towards the detector 150A and a beam 140B directed towards the detector 150B. Either the third beam splitter 140 or the two detectors 150A and 150B comprise materials with a wavelength-dependency of the characteristics. Preferably, the third beam splitter 140 provides a coupling-ratio between the beams 140A and 140B which is dependent on the wavelengths. In a preferred embodiment, the coarse-measuring unit 130 comprises a glass plate with a

dielectric coating (PRC) on one side and an anti-reflection coating (ARC)on the other side, thus providing a wavelength dependent beamsplitter (WDBS). The PRC has a high wavelength-dependent reflection-/transmission-characteristics, and the ARC is optimized for minimum reflection to avoid light disturbances coming from the second surface falsifying the PRC transmission and reflection characteristic. The beams 140A and 140B separated by the WDBS are launched to the two detectors 150A and 150B (e. g. photodiodes) for measuring the characteristic properties, such as reflection and/or transmission, of the PRC.

9. The following paragraph is the marked up version of the paragraph beginning at page 9 line 13 and ending at page 9 line 20.

Figure 2 shows an example of a wavelength-dependency of the coupling ratio between the beams 140A and 140B of the third beam splitter 140. The third beam splitter 140 exhibits a transmission characteristics T, which increases from roughly 5% at 1500nm to 98% at 1600nm, and a reflection characteristics R, which decreases from roughly 95% at 1500nm to 2% at 1600nm. It is clear that T+R =1 has to be fulfilled in the ideal case. In this example, the (applicable[ ])_range of the wavelength λ[8] is selected to cover approximately 1500-1600nm as the currently applied 'telecommunication window'.

10. The following paragraph is the marked up version of the paragraph beginning at page 12 line 28 and ending at page 13 line 7.

The wavemeter 50 can be calibrated as described above, and the coarse-measuring unit 130 may be also calibrated with the absolute-measuring unit 300 as often as necessary according to the stability of the coarse-measuring unit 300. If an unknown signal (input beam 100)_is launched into the wavemeter 50, the respective power values P_λ[8] are measured with the photodiodes150A, 150B, 230A, and 230B of the coarse-and fine-measuring units 130 and 200, and received by the evaluation unit 350. In the simplest way, these power values P_λ[8] are used by the evaluation unit 350 applying a searching

algorithm to find the corresponding λ[8]-value in pre-defined look-up tables. Between the calibrated values, the unknown wavelength may be determined by interpolation algorithm. These described controlling mechanism software may also be running on an external PC software. The λ[8]-value is then output at output 360.

11. The following paragraph is the marked up version of the paragraph beginning at page 9 line 22 and ending at page 10 line 2.

The beam 120B from the second beam splitter 120 is directed towards a fine measuring unit 200. The fine-measuring unit 200 applies the principle of interferometry for determining the wavelengths of the beam 120B. The fine measuring unit 200 might comprise a single etalon element or two etalon elements in combination, both as described in the aforementioned EP-A-875743. Alternatively and as shown by the example of Fig. 1, a single birefringent element 210, e. g. a λ[8]/8 retardation plate, in combination with a respective polarizing beam splitter 220 can be applied accordingly, as also disclosed in detail in the aforementioned EP-A-875743. In this case, one birefringent quartz plate 210 fulfils the functions of two etalons, wherein the corresponding transmission signals are separated spatially. This optical component has two major optical axes, which are different in optical thickness, and the signal separation is done based on orthogonal states of polarization. Light from the polarizing beam splitter 220 is split up into a beam 220A launched to a detector 230A, and into a beam 220B launched to a detector 230B.

12. The following paragraph is the marked up version of the paragraph beginning at page 10 line 4 and ending at page 10 line 11.

Figure 3 depicts an example of a wavelength-dependency of the fine-measuring unit 200, which substantially represents a tangent relationship for a determined value λ[8] over the wavelength (cf. also Figs. 6 and 7 and the accompanying description of the aforementioned EP-A-875743 which shall be incorporated herein by reference). For the

sake of simplicity, only a part of the wavelength-dependency is shown in Fig. 3. It is clear that the accuracy of the tangent relationship over the wavelength depends on the specific arrangement and wavelength properties of the components of the fine-measuring unit 200.

13. The following paragraph is the marked up version of the paragraph beginning at page 10 line 33 and ending at page 11 line 3.

Accordingly, the evaluation unit 350 receives measuring signals from the two detectors 230A and 230B of the fine-measuring unit 200, and determines therefrom the corresponding λ[8]-value. Due to the ambiguity of the wavelength dependency, the determined λ[8]-value will generally correspond to a plurality of different wavelength values.

14. The following paragraph is the marked up version of the paragraph beginning at page 11 line 24 and ending at page 11 line 28.

In an example in conjunction with Fig. 3, the evaluation unit 350 determines a λ[*]-value of π[B/]/2, which corresponds to wavelength values of 1552,5nm, 1562,5nm, and 1572,5nm (or in general 1552,5nm plus /minus multiple FSR). The first wavelength value as determined by the coarse unit 130 shall in this example be 1559nm.

15. The following paragraph is the marked up version of the paragraph beginning at page 13 line 9 and ending at page 13 line 19.

In another operation mode, the input signal of beam 100 is swept over a larger wavelength range, and e. g. a part of it is separated to characterize the transmission parameter (e. g. insertion loss) of an optical component (not shown). The power values P[8]λ measured with the wavemeter 50 are measured at the same time as the parameter of the optical component by use of a (not shown) trigger-unit. The corresponding λ[8]-value

may be calculated by the evaluation unit 350 during or after the sweep. Depending on the trigger-unit, an absolute high-accuracy wavelength measurement of the parameter under test is possible. If the absolutely known transmission features of the absolute-measuring unit 300 is within the wavelength range of the wavelength sweep, the coarse-measuring unit 130 can also be recalibrated afterwards.

16. The following paragraph is the marked up version of the paragraph beginning at page 1 line 19 and ending at page 1 line 24.

A first general principle for determining the optical wavelength makes use of changes in the characteristic properties of some materials in dependency of the wavelength. DE-A-3929845 discloses a dual detector with at least two detectors with different spectral sensitivity and a computer for determining the incident light wavelength from the photo[-]current difference or ratio. A similar dual detector is disclosed in DE-A-3030210.

17. The following paragraph is the marked up version of the paragraph beginning at page 2 line 23 and ending at page 3 line 5.

A further interferometric solution makes use of the interferometric properties of etalons, i. e. plane parallel plates of glass or fused quartz with reflecting surfaces. Due to the interference at the surfaces within the etalon, the light beam transmitted through the etalon exhibits a wavelength dependent transmission characteristics, generally showing a sinus or cosines shape. As disclosed in EP-A-875743, the wavelength resolution can be significantly improved by combining two etalons with different phase dependencies on the wavelength. By providing a phase shift (in particular of n/2) between the two curves, the problem of the ambiguous turn points in the sinus-or cosines-like shapes can be avoided and a tangent relationship on the wavelength can be achieved. Instead of using two separated etalon elements, one birefringent element can be provided in combination with corresponding polarizing elements. Since the resulting transmission-over-wavelength characteristic is not unambiguous due to the periodicity of the curves, main

applications are fine-tuning of variable laser sources, whereby the wavelength location is already roughly known and can therefor be assigned to a corresponding period of the curve.

18. The following paragraph is the marked up version of the paragraph beginning at page 3 line 12 and ending at page 3 line 18.

US-A-4,864,578 (Proffitt) discloses a scannable laser with integral wavemeter. The wavemeter comprises a fine wavelength read-out based on <u>an</u>[a] ambiguous interferometric wavelength determination, and a course wavelength read-out making use of optically active quartz crystals. The amount of polarization rotation is measured as a sample light beam passes along its axis, and this is correlated to the wavelength of the light beam. Both wavelength read-outs are then utilized to determine the wavelength of the incoming light beam.

MARKED UP VERSION OF AMENDMENTS TO THE CLAIMS

1. (Twice Amended) A wavemeter for determining a wavelength of an incoming optical beam comprising:

a coarse-measuring unit for determining in a first wavelength range and with a first accuracy, a first wavelength value as representing the wavelength of the incoming optical beam,

a fine-measuring unit for providing a wavelength determination with a second accuracy for the incoming optical beam, wherein the wavelength determination is ambiguous within the first wavelength range but unambiguous in each of a plurality of unambiguous wavelength ranges, so that a plurality of different wavelength values correspond to a measuring value as measured by the fine-measuring unit for the incoming optical beam and wherein the second accuracy is higher than the first accuracy,

an evaluation unit for determining a second wavelength range covering the first wavelength value, and for determining a second wavelength value as the one of the plurality of different wavelength values that corresponds to the measuring value in the second wavelength range, and

output means for providing the second wavelength value as measuring result of the wavemeter representing the wavelength of the incoming optical beam,

wherein the coarse-measuring unit comprises one or more materials having a <u>wavelength</u>[wavelenght]-dependency of reflection and/or transmission.

2. (Twice Amended) The wavemeter of claim 1, wherein the fine-measuring unit comprises means for providing a periodic wavelength dependency, [preferably an interferometric unit,] the periodicity of the wavelength-dependency being larger than a measuring fault or inaccuracy of the coarse-measuring unit.

7. (Twice Amended) The method of claim 6, further comprising:
providing a reference measurement <u>from</u> an absolute-measuring unit having unambiguous and absolutely known wavelength properties.

16. (Amended) The method of claim 6, further comprising:
providing a reference measurement from an absolute-measuring unit having unambiguous and absolutely known wavelength properties, including absolutely known transmission features provided by a gas absorption cell.

17. (Amended) The method of claim 7, wherein providing a reference measurement is executed concurrently with determining in a first wavelength range and with a first accuracy, a first wavelength value, and providing a wavelength determination with a second accuracy for the incoming optical beam, for providing a continuous calibration[preferably during the actual measurement].

18. (Amended) The method of claim 7, wherein providing a reference measurement is executed concurrently with determining in a first wavelength range and with a first accuracy, a first wavelength value, or providing a wavelength determination with a second accuracy for the incoming optical beam, for providing a continuous calibration[preferably during the actual measurement].

MARKED UP VERSION OF AMENDMENTS TO THE ABSTRACT

Please replace the abstract with the one shown below. Another version of the abstract, which is enclosed with this amendment on a separate page, is marked up to show all the changes relative to the previous version of the abstract.

A[Disclosed is a] wavemeter [(50)]for determining a wavelength of an incoming optical beam[(100)]. The wavemeter comprises a coarse-measuring unit [(130)]determining in a first wavelength range a first wavelength value as representing the wavelength of the incoming optical beam, and a fine-measuring unit [(200)]providing a wavelength determination for the incoming optical beam that is ambiguous within the first wavelength range but unambiguous in each of a plurality of unambiguous wavelength ranges, so that a plurality of different wavelength values correspond to a measuring value as measured by the fine-measuring unit for the incoming optical beam. The wavemeter further comprises an evaluation unit [(350)]for determining a second wavelength range as the one of the plurality of unambiguous wavelength ranges that covers the first wavelength value, and for determining a second wavelength value as the one of the plurality of different wavelength values that corresponds to the measuring value in the second wavelength range. The second wavelength value is output as measuring result of the wavemeter representing the wavelength of the incoming optical beam.